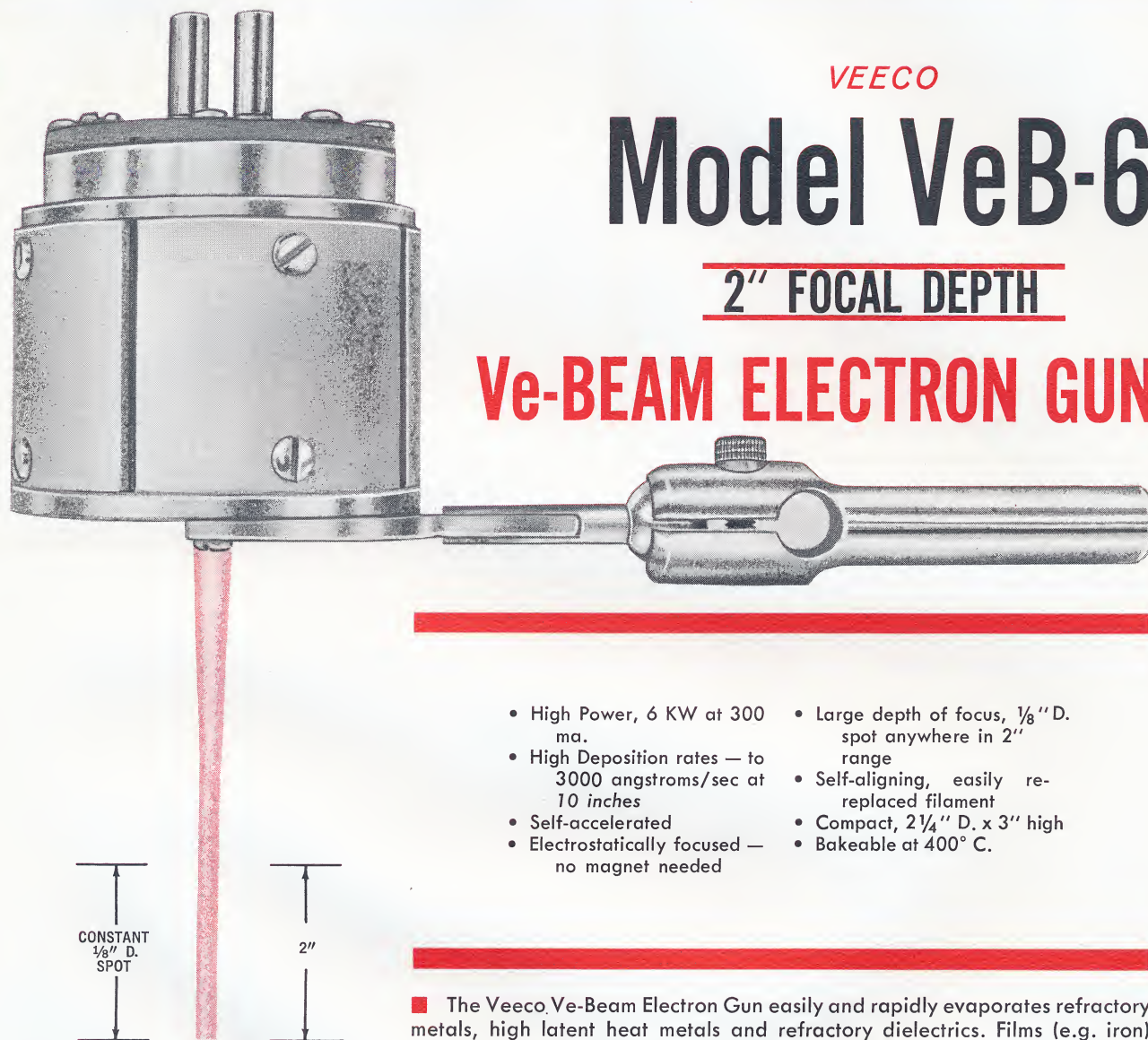


NEW PRODUCT

BULLETIN



INSTRUMENTS, INC. PLAINVIEW, L. I., N. Y.
Formerly VACUUM-ELECTRONICS CORP.



- High Power, 6 KW at 300 ma.
- High Deposition rates — to 3000 angstroms/sec at 10 inches
- Self-accelerated
- Electrostatically focused — no magnet needed
- Large depth of focus, $\frac{1}{8}$ " D. spot anywhere in 2" range
- Self-aligning, easily re-replaced filament
- Compact, $2\frac{1}{4}$ " D. x 3" high
- Bakeable at 400° C.

■ The Veeco Ve-Beam Electron Gun easily and rapidly evaporates refractory metals, high latent heat metals and refractory dielectrics. Films (e.g. iron) can be laid down at rates up to 3000 angstroms/sec.

The self-accelerated, Pierce-type gun concentrates a maximum of 6 KW on a $\frac{1}{8}$ " diameter spot. The electron beam is sharply defined and the $\frac{1}{8}$ " spot diameter is held over a 2" beam length. Focusing is insensitive to accelerating voltage, so that a highly regulated supply voltage is not required.

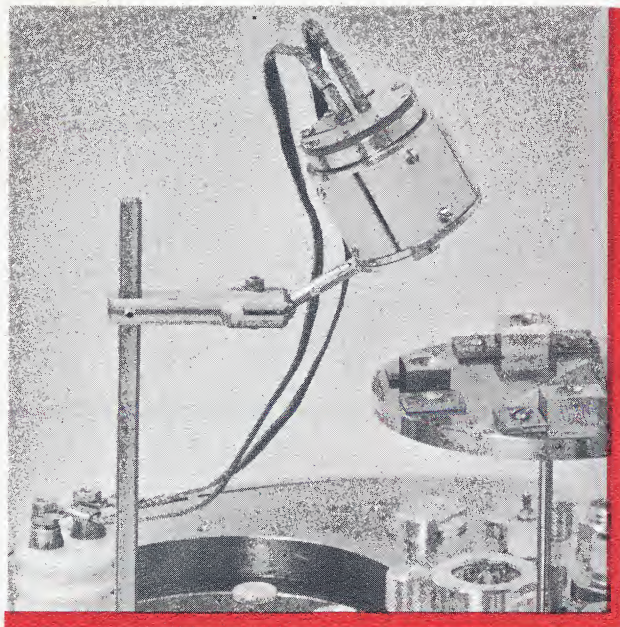
The Ve-Beam gun is compact and light and is easily mounted inside the bell-jar by means of a support-rod integral with the unit. Three-dimensional adjustment is attained through a ball-and-socket joint on the adjustable support-rod. The gun is supplied with a dual-electrode ceramic power feedthrough which installs in a 1" diameter hole. No bell-jar mountings are necessary.

The electron beam can be simply deflected by an electrostatic deflection plate attached to the cathode. Thus, the evaporation source and substrate can be placed so as not to see the gun filament.

All materials used in the Ve-Beam gun are suitable for ultra-high vacuum use; the structure is bakeable at 400° C.

The filament is held by a pin vise so that it can be removed, replaced, and aligned in under a minute. The Ve-Beam gun is of precise but simple construction. Disassembly for cleaning, and reassembly, requires only a screw driver.

The Veeco Ve-Beam gun has been designed to produce thin films from any material, rapidly, reliably, and with minimum time for maintenance.



SPECIFICATIONS OF VEECO Ve-Beam Gun Model VeB-6

Beam Power and Operating Voltage	6 KW, 3 KW, 2 KW
Beam Current	20 KV, 15 KV, 11 KV
Size of Gun	300 ma. max.
Spot Size	2 1/4" D. x 3" high
Efficiency	1/8" D
	99.5%

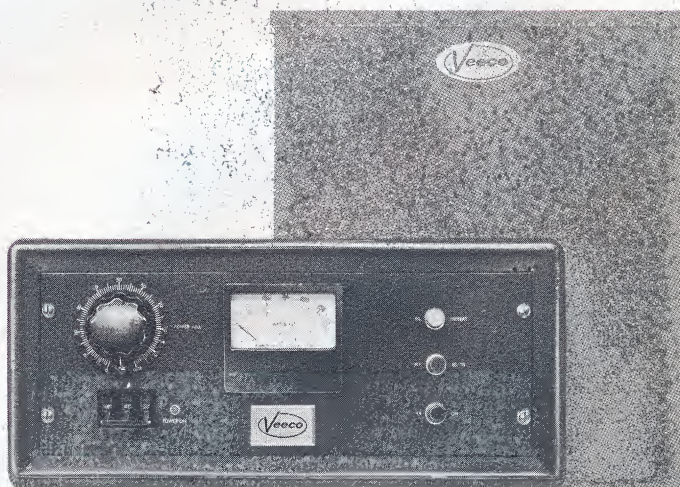
Ve-Beam gun mounted in Veeco 775 Evaporator showing:

- a) Use of multiple source fixture
- b) Three-dimensional mounting of gun
- c) Dual-electrode, single-ended power feedthrough

Model PVeB-6 POWER SUPPLY For Ve-BEAM GUN

To provide the power required for the high evaporation rates attained with the Model VeB-6 Electron Beam Gun, Veeco has engineered the PVeB-6 Power Supply with these features:

- 6 KW output
- 11, 15 or 20 KV at taps
- 0-300 ma. output max., continuously variable
- Beam Power read directly from wattmeter
- Automatic preheat of filament
- Interlocks to prevent accidental application of high voltage
- Provision for process interlock or control



PVeB • Power Supply Control
(Transformer in Background)



INSTRUMENTS INC.